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CORROLATES OF SCHOOL LEARNING ENVIRONMENT AND INCLUSIVE SERVICE DELIVERY FOR PUPILS WITH INTELLECTUAL DISABILITY IN CROSS RIVER STATE, NIGERIA

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ABSTRACT

Introduction: In recent years, the problem associated with school learning environment in public primary schools in Nigeria has been branded by inadequate resources, congested class rooms and dilapidated structures. Most of the schools lack amenities, infrastructure, modern information technology facilities for inclusive service delivery for pupils with intellectual disability in Cross River State, Nigeria.
Purpose: The purpose of this study was to examine school physical and social learning environment as contributors of inclusive service delivery for pupils with intellectual disability in Cross River State, Nigeria.
Methodology: Correlational Survey design was used for the study and a sample of 1275 primary school teachers were selected through stratified random sampling method. The instrument titled "Determinants of Inclusive Service Delivery Questionnaire (DISDQ)" was used for data collection. The questionnaire was face-validated by experts and the reliability of the questionnaire using Alpha Cronbach Method which gives an index ranged between 0.81 to 0.87. Data collected was analyzed using the Simple Linear Regression and tested at 0.5 level significance.
Results: The results revealed that school physical and social learning environment contributed to inclusive service delivery for pupils with intellectual disability for pupils with intellectual disability in Cross River State, Nigeria.
Recommendations: It was recommended amongst others that among others that schools administrators should endeavour to create a conducive school environment in order to promote inclusive service delivery for pupils with intellectual disability.

Keywords: School physical, social learning environment, inclusive service delivery, intellectual disability

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PUBLIC INTEREST STATEMENT

This study will contribute immensely to the body of knowledge and also addressing the issues of school learning environment which is essential to inclusive service delivery for pupils with intellectual disability for pupils with intellectual disability in Cross River State, Nigeria.. By examining the contribution of school learning environment in terms of school physical and social learning environment to effective inclusive service delivery for pupils with intellectual disability for pupils with intellectual disability. The findings will provide valuable insights for teachers, administrators, policymakers, and government to develop supportive programs and initiatives that encourage conducive school learning environment for inclusive service delivery.

INTRODUCTION

Education is a right and compulsory to every Nigerian child irrespective of his/her peculiar challenge or disability status and as a result, no child is expected to be denied access to quality education especially at the primary level. It is based on the fact that every child including pupils with intellectual disability can learn and become useful to themselves and the nation if given appropriate learning access. Inclusive education programme was introduced in Nigeria to bring the needed reformation that may cater for the education of children of school age irrespective of their disability status. Inclusive education refers to a practice where children with special needs receive education in their locality together with those without disabilities in mainstream classrooms (Payan, 2012 ;Anam, Nsor, &Ukpata, 2025; Akpa, Anam, &Akah, 2024; Akpa, Ekpenyong & Emmanuel, 2024). It is a policy programme designed to allow children with special needs to attend regular school as they would have attended if they were no disability or special needs. The ultimate goal here is to provide a learning environment that will cater for the diverse needs of the children as different categories of learners requires differentiated approaches and material to learn.

Children with intellectual disability for example require adequate attention, provisions and monitoring in school due to their unique challenges. According to Buli-Holmberg and Jeyaprathaban (2016), they require special instruction outside the conventional teaching methods. This category of children once incorporated in the general education settings, develop "literacy skills, mathematic skills and adaptive behaviour displayed at school and at home" (Sermier, Dessemontet, Bless, & Morin, 2017; Ataben, Olofu & Ifeoma, 2024; Akpa, Anam, & Akah, 2024). Intellectual disabilities - "a disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. This disability originates before the age of 18" (American Association on Intellectual and Developmental Disabilities, 2021). These limitations cause a child with intellectual disability to develop intellectual capabilities more slowly than children without intellectual disability within the same age range.

Inclusive service delivery for children with special needs especially those with intellectual disability requires basic resources and provisions as enshrined in the Nigeria Education policy documents to cater for their educational needs to enable them benefits maximally in our school system. Making appropriate education available to children with special needs especially children with intellectual disability is one sure means of achieving access and equity as recommended by UNESCO for inclusive education programmes.

School physical and social environments, play a major role in the promotion of the entire school activities as well as attainment of inclusive service delivery for pupils with intellectual disability. There are elements in the school system which direct performance of duties and obligations in the school system. They may make or mar inclusive service delivery depending on the management or how it is use. Cotton (2016) in his own contribution stated that school factors can be described as

healthy or unhealthy, open or closed, internal or external, supportive or unsupportive resources to teaching and learning. He went further to say that for a school factor to be regarded as healthy it must conform to some standards, for example such school's physical and psychological environment must be warm, welcoming and conducive for teaching and learning. Such schools must also have enough school blocks for different purposes, good and spacious classroom, properly lit with teacher-pupils' ratio of between 20-25 pupils per teacher. The closed or negative school factors are a restricting atmosphere based on autocratic principles. This kind of environment may hinder teaching and learning process and discourage teacher and pupils' active participation in school activities. A school with an open or positive climate has a humanistic orientation that creates conducive environment for teaching and learning of children with intellectual disability.

Alexander (2013), observed that a conducive and healthy school environment shapes the attitudes which children develop toward the school as well as promotes teaching and learning. A safe and healthy physical environment requires a good location and safe buildings; protection from excessive noise; natural light; clean indoor air and water; a healthy outdoor environment; and healthy school related activities including safe management and maintenance practices, use of nontoxic cleaning supplies, careful use of pesticides, vector control and use of non-toxic art supplies. According to Baptiste, Malachie and Struthers (2013), to achieve inclusive education, appropriate school buildings such as toilets, seats or chairs, play-ground, doors and class should be designed in a way that also consider children with disabilities. In this regard, there is a necessity to make adaptive learning facilities for children with disabilities and allow them to cope up with the learning environment and therefore increase their school attendance. A conducive physical environment may improve the school attendance in children with disabilities and hence a successful education for all.

Baptiste, Malachie and Struthers (2013), conducted an investigation to identify the physical environmental barriers to school attendance by children with disabilities in two community based rehabilitation (CBR) centres in Rwanda and found the long distance from home to the nearest school, and the status of the school physical environment were the major barriers to school attendance. In conclusion, to meet the Special Needs Education, strengthening existing measures to make a conducive physical environment would enhance school attendance among children with disabilities and subsequently the overall inclusive education.

Aina (2015) in a study investigated the school environment and pupils' satisfaction with schooling in Ondo State, Nigeria. Two hypotheses were formulated and tested and found out that pupils in compliant schools were more satisfied with schooling than pupils in non compliant schools. It was recommended that adequate facilities should be provided for the non compliant schools to make pupils derive satisfaction with schooling. Francis and Joyce (2018) in examining the physical environment of Ghanaian inclusive schools: how accessible, suitable and appropriate is such environment for inclusive education and found that the physical environment of most 'inclusive schools' was of a poor quality, less accessible for children with physical and other sensory motor disability, and less suitable for most physical activities, including sports, and physical education for all children. They also highlighted the need for good architectural designs to facilitate effective natural and artificial illumination in classrooms and buildings, modification of facilities, and redesigning the physical landscape of schools to promote accessibility and use for all children, regardless of disability.

The concept of the school social environment refers to the quality of relationships among students, as well as the interactions between students, teachers, other staff members, and school leadership within an educational setting (Schools for Health in Europe, 2023). It encompasses the interactions,

dynamics, and overall atmosphere within the school community. The school's social environment plays a crucial role in shaping students' overall well-being and academic success.

Research suggests that a positive and supportive school social environment contributes to a range of benefits for students. It fosters a sense of belonging and connectedness, promotes positive peer relationships, enhances social and emotional development, and creates an atmosphere conducive to learning (Schools for Health in Europe, 2023). When students feel safe, respected, and included within their school community, they are more likely to engage in their studies, participate in extracurricular activities, and develop a positive attitude towards school.

Teachers also play an important role in cultivating a positive social environment within the school. They can promote open and honest communication with families, making them feel welcome and involved in their child's education (Green, & Schwartz, 2023; Anam, 2016; Anam & Nanjwan, 2016). Additionally, teachers must ensure that students with disabilities have opportunities to interact with their peers and receive necessary support in social interactions (Green, & Schwartz, 2023; Akpa, Ekpenyong, & Emmanuel, 2024). Teaching friendship skills and facilitating inclusive practices can further contribute to a supportive social environment for all students.

The impact of the school social environment extends beyond socialization. It is closely linked to student learning outcomes. A positive psychosocial school environment creates a conducive atmosphere for effective teaching and learning (UNESCO Institute for Educational Planning, 2023). When students feel valued and connected, they are more likely to actively engage in their education, collaborate with peers, and seek help when needed. Furthermore, the school social environment is intertwined with various social factors involved in school learning. It influences the socialization of students through school rules, codes of conduct, dress codes, and the relationships they develop with their teachers (Robson, 2023). The school's social climate, including the interactions and relationships between students and teachers, significantly impacts students' overall socialization process (Robson, 2023).Scholarly articles emphasize the multidimensional nature of the school social environment, considering various aspects such as physical, social, and academic components (Tapia-Fonllem, Fraijo-Sing, Corral-Verdugo, Garza-Terán, & Moreno-Barahona, 2020; Veerman & Denessen, (2021). The physical environment includes the school's infrastructure, facilities, and resources, while the social environment focuses on the relationships and interactions between individuals within the school community. The academic environment encompasses the curriculum, teaching methods, and learning opportunities provided to students.

Research also suggests that a positive school social environment is fostered through authoritative leadership, effective teaching practices, structure and clarity in teaching (Nilholm, 2021). Creating a supportive and inclusive environment requires attention to factors such as warmth, support, research-based teaching approaches, and efficient use of teaching time. Furthermore, empirical studies have highlighted the relationship between the school social environment and students' engagement in learning (Brandisauskiene, Buksnyte-Marmiene, Cesnaviciene, Daugirdiene, Kemeryte-Ivanauskiene, Nedzinskaite-Maciuniene, 2021; Ibok & Masor, 2024; Ibok, Ogar, Bassey, James, & Udo, 2024;Anam, & Ahueeansebhor, 2017). Sustainable school social environment variables have been examined to understand their impact on engagement and learning outcomes. These studies aim to explore the differences based on gender and socioeconomic background, providing insights into the complex dynamics of the school social environment (Brandisauskiene, et al., 2021). Many studies lack focus on diverse educational settings and cultural contexts, limiting the generalizability of findings across different regions and school types. There is a scarcity of longitudinal studies tracking the impact of environmental

modifications over time on the inclusion and academic progress of pupils with intellectual disabilities. Many empirical works do not incorporate the voices of pupils with intellectual disabilities, their families, and teachers, leading to an incomplete understanding of environmental effectiveness. There tends to be more emphasis on physical accessibility features, with less attention paid to fostering positive social attitudes, inclusive culture, and peer interactions. Addressing these gaps would deepen the understanding of how physical and social environments collaboratively facilitate effective inclusive education and inform more comprehensive intervention strategies.

STATEMENT OF THE PROBLEM

The issue of school factors in public primary schools in Nigeria has been branded by inadequate resources, congested class rooms and dilapidated structures cannot be over emphasis. Most of the schools in rural areas lack modern information technology facilities for inclusive service delivery. Amenities and infrastructure existing for use in the public primary schools in Nigeria and certainly Cross River State do not give the impression to be adequate. Population sudden increase in public primary schools because of free education is causing a problem in terms of having sufficient classrooms to contain the pupils and the school staff. From the abovementioned problems, a number of head teachers appear to lack ways to tackle these problems. It is on the bases of this background that the study seeks to examine the contribution of school physical and social learning environment to inclusive service delivery for pupils with intellectual disability in primary schools in Cross River State, Nigeria.

PURPOSE OF THE STUDY

The main purpose of this study was to examine school physical and social learning environment as contributors of inclusive service delivery for pupils with intellectual disability in Cross River State, Nigeria. Specifically, the study seek:

1. School physical environment as a contributors of inclusive service delivery.
2. School social environment as a contributors of inclusive service delivery

HYPOTHESES

The following research hypotheses were formulated to guide study:

1. School physical environment does not significantly contribute to inclusive service delivery.
2. School social environment does not significantly contribute to inclusive service delivery.

METHODOLOGY

Design

The research design used for this study was the correlational survey research design. The correlational research design was used to established the relationship between the variables of study. This research design studies phenomena as they exist at the time of an investigation. Correlational research design was used for the study. The research design studies the interrelationship that exists among variables in a study. This design was chosen because this research is designed to investigate the relationship that exists between the independent variables (school physical and social environments) and the dependent variable (inclusive service delivery) in Cross River State . The purpose of this study can be achieved through the survey research design.

Population and Sample

The study includes a population of 12,749 teachers from 1085 public primary schools in Cross River State. The sample comprises of 1275 teachers distributed across the three educational zones in Cross River State which was randomly selected for the study with approximately 10% to ensure adequate representation of teachers. This study adopted multi-stage sampling approach which comprised stratified, random and purposive sampling techniques on the basis of schools and educational zones to

select the sample of sample 1275 teachers in primary schools.

In the first stage, stratified random sampling was adopted to stratified primary teachers based on 18 local Government Area in Cross River State. Simple random sampling technique was used to select 7 Local government Areas. This involves a lottery method by which the researcher wrote the names of the school and folded them into ball like shapes that were put into bowls. These Papers were thoroughly mixed in a bowl and the researcher randomly picked seven of the paper balls. From each selected Local Government Area, 10% of the entire population were randomly selected given a sample of of 1275 (10%) primary school teachers were selected via proportionate sampling technique for the study.

Instrument for Data collection

The instrument used for data collection was the questionnaire titled;"Determinants of inclusive service delivery questionnaire" (DISDQ) constructed by the researcher and validated by experts in Tests and Measurement and Special Education departments in the Faculty of Education Foundations studies, University of Calabar. The instrument consisted of three sections (A, B and C). Section 'A' was used to elicit respondents' personal information such as name of school, teacher gender. Section B which consists of 12 items was used to elicit respondents' information on teachers attitude and competence, as each could contribute to inclusive service delivery. But section C consisting of 10 items, was used to elicit respondents' information on inclusive service delivery. Teachers were expected to rate the items based on a 4-point Likert scale options of strongly agreed, agreed, disagreed and strongly disagreed. To establish the reliability of the instrument, the Cronbach Alpha reliability estimate method was adopted for the "Determinants of inclusive service delivery Questionnaire". This was done by administering the questionnaire to 60 respondents who were not part of the actual sample used for the investigation. It was subjected statistical analysis using Cronbach Alpha method. The advantage of using Cronbach Alpha is that it allows the researcher to administer the test once. The reliability estimates for the instruments ranged from 0.81 to 0.87, which is considered reliable. The data collected were analyzed hypothesis by hypothesis using Simple Linear Regression at .05 significance levels.

Procedure for Data Collection

Permission was obtained from all the Head master/head mistress of school and Heads of teachers of all the primary schools in Cross River State for the study. One primary school teacher in each the selected primary school was used as research assistant. The research assistants were briefed on the administration of the instrument to the respondents. Thereafter, the questionnaire were administered to the selected primary school teachers and same collected within three (3) days and the data used for analysis.

Method for data analyses

To prepare the data collected for statistical analysis, a coding schedule was designed for the questionnaire items based on four point Likert scale. Strongly agreed was assigned 4-points, Agreed 3 points, Disagreed 2-points while Strongly Agreed 1point. This were scored and used for data analysis. The Statistical Package for Social Sciences (SPSS) computer programme was used to analyze the data collected. The hypotheses formulated to guide the study were appropriately tested using a Simple Linear Regression at .05 level of significance for the two hypotheses.

RESULTS

Hypothesis 1: School physical environment does not significantly contribute to inclusive service delivery.

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Table 1: Regression analysis showing the contribution of school physical environment to inclusive service delivery

Source of variation	Sum of squares	Df	Mean square	F-value	p-value	R	R^2
Regression	5.377	1	5.377	.774	.379	.025	.001
Residual	8841.368	1273	6.947				
Total	8846.745	1274					

Predictor variable	Unstandardized coefficient		Stdcoeff	t-value	p-value
	B	Standard error			
Constant	29.371	.689		42.622*	.000
School physical	-.034	.039	-.025	-.880	.379

*Significant at .05 level. P<.05}

Table 1 presents the analysis results, which show that the R-value obtained is .025 indicating a weak positive correlation between the school's physical environment and inclusive service delivery.. The R-squared value and adjusted R-square were found to be 0.001 and 0.000, respectively suggesting that the school's physical environment variation accounted for only 1% of the total variation in inclusive service delivery while the remaining 99% are accounted for by other factors not considered in this study. Furthermore, the p-value associated with the computed F-value was .379, which is greater than .05. This indicated that school physical environment does not significantly contribute to inclusive service delivery.

Hypothesis 2: School social environment does not significantly contribute to inclusive service delivery.

Table 2: Regression analysis showing the contribution of school social environment to inclusive service delivery

Source of variation	Sum of squares	Df	Mean square	F-value	p-value	R	R^2
Regression	48.637	1	48.637	7.037*	.008	.074	.005
Residual	8798.108	1273	6.911				
Total	8846.745	1274					

Predictor variable	Unstandardized coefficient		Stdcoeff	t-value	p-value
	B	Standard error			
Constant	30.572	.684		44.707*	.000
Social environment	-.103	.039	-.074	-2.653*	.008

*Significant at .05 level. P<.05}

The results presented in Table 2 show that the R-value obtained was .074, which indicated that there is a weak positive contribution of school social environment to inclusive service delivery. This means that as the school social environment becomes less supportive, inclusive service delivery also tends to decrease. However, as indicated in the R-squared value (0.005) and the adjusted R-squared value (0.005), the correlation is weak, indicating that the school social environment accounts for 0.5% of the variation in inclusive service delivery. This result means that there are other factors that account for the remaining 99.5% of the variation in inclusive service delivery which are not considered in the present study.

From the ANOVA table, the computed F-value was 7.037, and the associated p-value was .000, which is less than the alpha level of .05. Meaning that the results are statistically significant, and the researcher can confidently reject the null hypothesis.

This indicated that school social environment significantly contribute to inclusive service delivery.

DISCUSSIONS

The result of the first hypothesis revealed that the physical environment of schools has no significant contribution to inclusive service delivery. This research finding is noteworthy and somewhat unexpected. It is reasonable to assume that the physical surroundings of a school would affect the ability of students with disabilities to learn and participate in school, thus having a positive influence on inclusive service delivery. Nonetheless, the research findings propose that this is not universally true. The finding that the school's physical environment does not significantly influence inclusive service delivery suggests that other factors may be more significant in the provision of inclusive education services. These factors may include teacher competence, administrative support, school resources, and community attitudes towards inclusion.

There are a few possible explanations for this finding. First, it is possible that the schools in the study area were already fairly accessible to students with disabilities, even if they did not have a lot of specific accommodations or modifications. Second, it is possible that other factors, such as teacher attitudes and student needs, played a more important role in determining the quality of inclusive service delivery than the school's physical environment.

Despite the research findings, it is still important for schools to create a physical environment that is accessible to all students, including those with disabilities. This can be done by making sure that all buildings and facilities are accessible, that all classrooms and other learning spaces are well-lit and have enough space for students to move around, and that there are appropriate accommodations and modifications in place for students with disabilities. The research findings can be interpreted that the school's physical environment is not the only factor that influences inclusive service delivery. Other factors, such as teacher attitudes and student needs, also play a role.

This research finding thus contradicts the result of Baptiste, Malachie and Struthers (2021) that the long distance from home to the nearest school, and the status of the school's physical environment were the major barriers to school attendance and Torupere (2016) whose finding revealed that aesthetic beauty of the school and infrastructural facilities significantly influences students' academic performance. Similarly, Nyaigoti, (2013) discovered that physical facilities influenced the implementation of inclusive education in public primary schools.

The result of the second hypothesis suggests that there is a weak positive contribution of the school's social environment to inclusive service delivery. This finding implies that the social environment of a school can have some impact on the provision of inclusive education services, and the influence was significant at a .05 level. This means that schools with a more positive social environment are more likely to provide better inclusive service delivery, but the influence is not strong.

The social environment of a school refers to the culture, norms, values, and relationships that exist among pupils, teachers, parents, and other stakeholders in the school community. Inclusive education requires that schools create a positive and supportive social environment that promotes social inclusion and acceptance of pupils with diverse learning needs. The finding that there is a weak positive influence of a school's social environment on inclusive service delivery suggests that the social environment of a school can impact the provision of inclusive education services, but other factors may be more significant in determining the quality of inclusive services provided.

Some reasons for the significant influence found in the study suggests that a positive social environment can create a more welcoming and supportive environment for all students, including those with disabilities. This can make it easier for students with disabilities to feel

included and to participate in school activities. Also, a positive social environment can help to build relationships between students with disabilities and their peers. This can lead to increased understanding and acceptance of students with disabilities, which can make it easier for them to succeed in inclusive classrooms.

This study's findings help triangulated the previous studies conducted by different scholars. For instance, a study by Carlo (2022) shows that the instructional leadership of Asatidz coordinators was dependent on the school climate of pilot public schools. César, Blanca, Victor, Glenda, and Melanie (2020) acknowledged the variable of school environments as a result determined by physical, academic, and social factors. In a related study, Ihekoronye (2020) shows that school noise affects students' performance negatively. Though, their finding further indicated that air-conditioned classrooms and the decoration of classrooms do not improve students' understanding, retention and sense of comfort.

CONCLUSION

A supportive school physical and social environment plays a crucial role in fostering inclusive service delivery for pupils with intellectual disabilities. A well-designed, accessible, and safe physical environment ensures that all students can participate fully and independently, reducing barriers to learning. Equally, a positive social environment characterized by respectful interactions, peer support, and inclusive attitudes promotes social integration and emotional well-being. Together, these environments create a foundation that not only accommodates the diverse needs of pupils with intellectual disabilities but also encourages their active engagement and learning. For truly inclusive service delivery, schools must continuously adapt and promote both physical accessibility and social acceptance, ensuring every child feels valued, supported, and capable of reaching their full potential. It was concluded that school learning environment(in terms of school physical and social environment) contributes to inclusive service delivery for pupils with intellectual disability in primary schools in Cross River State, Nigeria.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

1. Schools administrators should endeavour to create a conducive school environment in order to promote inclusive of service delivery for pupils with intellectual disability in Cross River State.
2. Teachers should try as much as possible to provide a positive psychosocial school environment that creates a conducive atmosphere devoid of noise for effective teaching and learning.
3. School management should fosters a sense of belonging and connectedness among learners to promotes positive peer relationships, enhances social and emotional development, which will in turn creates an atmosphere conducive for learning.
4. The Government of Cross River State should endeavour to improve the physical structures or educational facilities to facilitate accommodation of pupils with intellectual disability.
5. Government and administrators should provide a conducive physical environment may improve the school attendance in children with intellectual disability and hence a successful education for all.

Conflicts of Interest

The authors declare no conflict of interest.

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Authorship and level of contribution

Ataben, Michael O.: writing original draft, investigation data collection, also serves as the resource supervision, methodology review and editing validation, and proof reading of the work.
Udie, Lazarus I :.Did the content and face validity, handles the reliability of the instrument.
Adimabua, Esther I: Conceptualization, investigation and data collection

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